

# Lean Design Australia

Munro  
&  
Associates, Inc. ®



Building new world class capability

## Defence Manufacturing

Delivering to Defence the Capability it is seeking - at the Cost level it wants - in the Timeframe it needs.

Better Equipment - Better Defence – Better outcomes

**The new Defence Affordability Producibility lexicon is –  
“should be” Cost, “should be” Quality, “should be” program Time**

## Explanation Document

Transforming Australian Defence Manufacturing with bold newly developed capabilities to better deliver Cost, Time & Sustainment outcomes demanded with a newly developed next generation business transformation program.

## A Smart Transformation Program

Document by Kaikaku Corporation Pty Ltd  
In association with Lean Design Australia Pty Ltd  
Supported by Munro & Associates, Inc.

**Our combined goal with Clients is to conceive much higher quality, lower cost, more elegant designed products, on time, with efficient producibility outcomes that will deliver what defence wants – when defence wants it – at the price defence wants to pay.**

# Explanation Document

## The Munro Affordability Producibility (AP) RoadMap

Introducing the worlds newest and best, most effective, Affordability / Producibility RoadMap for all forms of Defence equipment acquisition Programs.

Over many years of development in general manufacturing and in defence manufacturing the Munro Design System has evolved into a **next generation business transformation** program.

While its basis is quite a small change in the clients business model with the insertion of a design innovation ( or design concept ) stage in the product development cycle – it delivers profound transformative change to every step and process downstream from that point.

Whether clients are designing small components or complete ships or Aircraft this program delivers very significant Cost, Quality and Time benefits to all firms who make the change to implement this next generation program across their business.

So whether you are :-

- Clean sheet designing and developing a component – thru to a Tank – or a whole Warship,
- Looking to reduce the acquisition or operating Costs of manufactured equipment, or
- Remediating a Collins Class Submarine

**Then this is the program for you.**

### How does the new Munro AP RoadMap work ?

**It is a complete Paradigm shift from traditional design and development methods**

#### Traditional Manufacturing Design methods :-

**- concepts are first detail designed to meet a function, and only then are they analysed for cost and quality. ( by then time pressures mean it is too late to change much to reduce cost or fix problems )**

**Versus**

#### Next Generation Munro Affordability Producibility Modeling :-

**- products are first analysed at the concept level for cost, time, quality, producibility, function and complexity, then simplified, - then, and only then are the best options / outcomes selected for detail design – and on into development and production**

We first design to these targets – and only when we achieve the targets – do we move on to detail design and development – sounds like it takes longer – but in reality it takes 10-30% shorter time – and achieves much lower costs – and much better producibility than using the traditional method.

It better demonstrates if new technology & methods are being developed and employed.

It provides the capability to greatly enhance program accuracy - in a shorter timeline - and with only a nominal increase in the level of effort required to achieve these results.

**This means an end to the old Defence method of - as-is costs, as-is quality, as-is program time**

**The new lexicon is – “should be” Cost, “should be” Quality, “should be” program Time**

**The new Munro Affordability Producibility RoadMap is a win-win-win for everyone concerned.**

Traditional Design & Development program



New Design & Development program – using Munro



Munro Design  
Innovation Module



A Complete Transformation Change here

### What are the Benefits of the next generation Munro AP RoadMap ?

**Contractors** – Now have a method to give defence – what it wants – when it wants it – at the price it wants to pay – with far fewer problems - while still allowing the supply-chain to be profitable.

**Defence** – Gets Affordable, Producibile equipment – on Cost – on Time – and with the results it wanted

**Warfighter** – gets the equipment he wants with the functionality he needs – when he needs it

**Defence Minister** – Imagine if you will – never having to announce another “Project of Concern” to the media maelstrom that is baying for the blood of someone for yet another troubled Defence program, or from the all too regular cost or time blowouts – or that the Collins has been successfully remediated.

**DMO Program Manager** – when you are to be held personally accountable for the project's success – you want to be sure the system delivers great results every time.

**Taxpayer** – when you are paying the bill – you want to be sure that Defence receives great value for the money provided – and none of your hard-earned taxes are wasted.

While it has been developed as a new product development system – it works equally as well when used to review current products to either significantly reduce costs – or to fix quality or other problems that may be experienced during production or in the hands of the customer.

**The new Munro Design System is a next generation Defence Transformation Program that delivers win-win-win for everyone.**

## Introduction Kaikaku Design System

- *Design for Cost - Target Cost – 3 to 50%*     ↓
- *Design for Time – Target Time – 10 to 40%*     ↓
- *Design for Quality – Target Quality - 40 to 80%*     ↑
- *Producibility of Designs*     ↑
- *Effective Project Management*     ↑
- *VOC into program designs*     ↑

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**Subject:** a new, next generation methodology to **completely eliminate** all **“projects of concern”** in all future Australian defence equipment design, development, production, or sustainment programs.

Munro & Associates have now completed the base work necessary to achieve a **complete paradigm shift in total program performance and delivery of outcomes** for all forms of Defence equipment – from simple parts - through to whole programs – or remediation of sustainment problems in all forms of defence “projects of concern”.

The Munro Affordability Producibility (AP) RoadMap, the new Producibility index and the Confidence index that we have recently completed are in fact only the final parts of a five step process developed for the express purpose of achieving the desired performance outcomes of the US “Defence Weapons acquisition reform act of 2009” whose purpose is to **achieve essential reform of the whole US defence equipment procurement system**.

The five parts being:

1. **Manufacturing Readiness level** – is the design manufacturable on Time with high Quality & low Cost
2. **Technology Readiness level** – does technology integrate correctly & will it actually work in the field
3. **Sustainment Readiness level** – is the design easily serviced, maintained & upgraded for whole of life
4. **Producibility Index** – uses the above to predict the final producibility outcome of the chosen design
5. **Confidence Index** – whether the chosen design achieves Performance, Cost and Time outcomes

When combined together with the new Munro AP Roadmap these five parts are now **capable of predicting at a very early stage in the design process, ( before you cut steel ) and with a very high degree of accuracy, whether the program will, or will not, achieve the operational functionality, Quality, Cost, Time, Sustainment and Program Capability outcomes** demanded by the warfighter for the equipment program.

This means an end to the old Defence outcomes from - as-is costs, as-is quality, as-is program time

**The new lexicon is – “should be” Cost, “should be” Quality, “should be” program Time**

In the USA the data and control systems in the new generation programs are so secure and robust that the data meets US Congress’s requirements for “independent” verified costs and data on defence programs – and it also passes the Sarbanes Oxley act requirements for independently verified data.

While this next generation system is still in an early stage of integration and development as a single system available for commercial use - the case studies presented to the US Military have correctly predicted at an early stage a greater than 95% performance outcome for the ultimate designs in those case studies – which was then achieved.

While I am unable to show or use those case studies due to secrecy and ITARS limitations – we have made a non-secret case study which I can show which uses an old equipment program and in which the next generation Munro program has very accurately replicated the actual both the before and after results with amazing accuracy.

This case study is contained in the attached PDF file – Munro benefits example V4.pdf – which includes explanatory notes for each section of the case study’s executive summary.

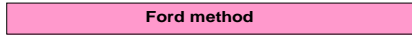
In essence the completion of these two new sections, and the completion of the new Munro AP RoadMap, means that within 6 months we will have a single, completely integrated, program which can be used by Defence itself, Defence primes, or the defence supply chain, to effectively eliminate problem programs – and which will allow you to **banish forever the dreaded “projects of concern” label** which hangs ominously over all Defence procurements.

In short I now have the tools to enable you to achieve the type of **Essential Reform of the Australian Defence procurement system** previously flagged by Dr Watt and the Defence Minister that is necessary in order to achieve Force 2030 without the problems that are being experienced today.

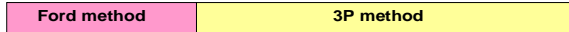
I look forward to discussing how you can use this new concept to **transform future Australian Defence programs**.

# Design Process Capabilities

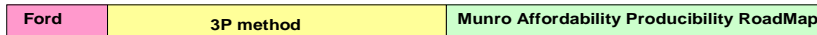
## Traditional Design & Development program



## 3P Design & Development program



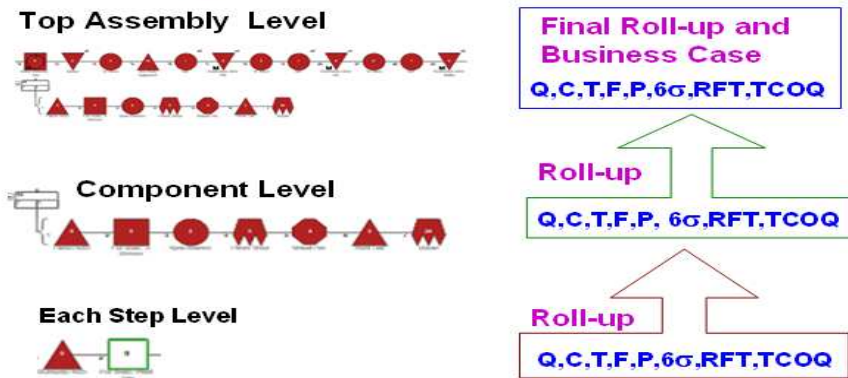
## Kaikaku Design & Development program – using Munro



**Whole - of - Life System Designs**

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# Design Process Capabilities



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# The Defence Challenge

**The OLD Way** ( brought to you by - "more of the same" thinking )

Gov't decides:-

- Funding
- Timing
- Performance
- Outcomes



Prime Delivers:-

- "As is" Costs
- "As is" Quality
- "As is" Time
- "As is" Producibility



Result:-

- Cost Blowouts
- Time Blowouts
- Quality Blowouts
- "Project of Concern"

**The Affordability Producibility Way**

Prime Delivers on:-

- "Must be" Costs
- "Must be" Quality
- "Must be" Time
- "Must be" Producibility



Gov't Now Decides:-

- Funding
- Timing
- Performance
- Outcomes



Result:-

- Affordable, Producible
- Equipment that works for the War-fighter
- With less Risk

**New Method**



- No more Collins Submarine debacles
- No more Joint Strike Fighter debacles
- No more Littoral Combat Ship debacles